CLAIMS

What is claimed is:

1. A method for inhibiting accumulation of reflective ash on surfaces in a furnace in which calcium-containing coal is burned, comprising:

(a) adding to the coal enough of a fluxing agent-free composition comprising an iron compound to produce treated coal that is free of added fluxing agent and contains an effective amount of the iron compound; and

(b) burning the treated coal, forming calcium ferrite.

2. A method as set forth in claim 1 wherein the iron compound is iron oxide.

3. A method as set forth in claim 2 wherein the iron oxide is ferric oxide.

4. A method as set forth in claim 1 wherein calcium oxide is produced when the treated coal is burned and the iron compound reacts with the calcium oxide to form the calcium ferrite.

5. A method as set forth in claim 4 wherein the iron compound is iron oxide.

6. A method as set forth in claim 5 wherein the iron oxide is ferric oxide.

7. A method as set forth in claim 1, comprising the steps of:

(a) adding an effective amount of an iron compound to the coal to produce treated coal free of added fluxing agent;

(b) grinding the treated coal to produce ground, treated coal free of added fluxing agent;

(c) introducing the ground, treated coal free of added fluxing agent into a furnace; and

(d) burning the ground, treated coal free of added fluxing agent in the furnace, producing calcium ferrite.

8. A method as set forth in claim 3 wherein the ferric oxide is added in an amount of from about 0.25% to about 0.75% based on the weight of the coal.

9. A method as set forth in claim 1 wherein the method consists essentially of:

(a) adding to the coal enough of a fluxing agent-free composition comprising an iron compound to produce treated coal that is free of added fluxing agent and contains an effective amount of the iron compound; and

(b) burning the treated coal.

10. A method as set forth in claim 9 wherein the fluxing agent-free composition consists essentially of ferric oxide.

11. A method for increasing the melting point of ash produced during the burning of calcium-containing coal, comprising:

(a) adding an effective amount of an iron compound to the coal to produce treated coal; and

(b) burning the treated coal, producing ash of increased melting point.

12. A method as set forth in claim 11 wherein the iron compound is iron oxide.

13. A method as set forth in claim 12 wherein the iron oxide is ferric oxide.

14. A method as set forth in claim 11, comprising the steps of:

(a) adding an effective amount of an iron compound to the coal to produce treated coal;

(b) grinding the treated coal to produce ground, treated coal;

(c) introducing the ground, treated coal into a furnace; and

(d) burning the ground, treated coal in the furnace, producing ash of increased melting point.

15. A method as set forth in claim 14, consisting essentially of the steps of:

(a) adding to the coal enough of a composition consisting essentially of ferric oxide to produce treated coal containing an effective amount of ferric oxide;

(b) grinding the treated coal to produce ground, treated coal;

(c) introducing the ground, treated coal into a furnace; and

(d) burning the ground, treated coal in the furnace, producing ash of increased melting point.